

FORM PTO-1390 (Modified) (REV 11-98)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				112740-145
INTERNATIONAL APPLICATION NO. PCT/DE99/02002		INTERNATIONAL FILING DATE 01 July 1999		U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 09776201P
TITLE OF INVENTION A COMMUNICATION SYSTEM INCLUDING AT LEAST ONE RADIO BASE STATION TO WHICH RADIO NETWORK TERMINATING FACILITIES FOR CONNECTING COMMUNICATION TERMINALS CAN BE CONNECTED				
APPLICANT(S) FOR DO/EO/US Andreas Gustke				
<p>Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:</p> <ol style="list-style-type: none"> <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c) (2)) <ul style="list-style-type: none"> a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). <input checked="" type="checkbox"/> A copy of the International Search Report (PCT/ISA/210). <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3)) <ul style="list-style-type: none"> a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input checked="" type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. <input checked="" type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)). <input type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409). <input checked="" type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)). <p>Items 13 to 20 below concern document(s) or information included:</p> <ol style="list-style-type: none"> <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. <input checked="" type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. <input type="checkbox"/> A substitute specification. <input checked="" type="checkbox"/> A change of power of attorney and/or address letter. <input checked="" type="checkbox"/> Certificate of Mailing by Express Mail <input checked="" type="checkbox"/> Other items or information: Submission of Drawings Figure 1 on one sheet 				

31 JAN 2001

U.S. APPLICATION NO. (IF KNOWN SEE 37 CFR 09762011	INTERNATIONAL APPLICATION NO. PCT/DE99/02002	ATTORNEY'S DOCKET NUMBER 112740-145
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21. The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

<input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2) paid to USPTO and International Search Report not prepared by the EPO or JPO	\$1,000.00
<input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but Internation Search Report prepared by the EPO or JPO	\$860.00
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO	\$710.00
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4)	\$690.00
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4)	\$100.00

ENTER APPROPRIATE BASIC FEE AMOUNT =

\$860.00

Surcharge of **\$130.00** for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492 (e)).

<input type="checkbox"/> 20	<input type="checkbox"/> 30	\$0.00
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CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	
Total claims	16 - 20 =	0	x	\$0.00
Independent claims	1 - 3 =	0	x \$78.00	\$0.00
Multiple Dependent Claims (check if applicable)			<input type="checkbox"/>	\$0.00

TOTAL OF ABOVE CALCULATIONS = \$860.00

Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable).

<input type="checkbox"/>	\$0.00
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SUBTOTAL = \$860.00

Processing fee of **\$130.00** for furnishing the English translation later than months from the earliest claimed priority date (37 CFR 1.492 (f)).

<input type="checkbox"/> 20	<input type="checkbox"/> 30	+ \$0.00
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TOTAL NATIONAL FEE = \$860.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable).

<input type="checkbox"/>	\$0.00
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TOTAL FEES ENCLOSED = \$860.00

	Amount to be: refunded	\$
	charged	\$

A check in the amount of **\$860.00** to cover the above fees is enclosed.

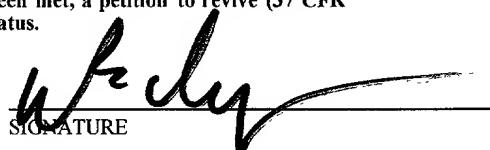
Please charge my Deposit Account No. in the amount of to cover the above fees.
A duplicate copy of this sheet is enclosed.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **02-1818** A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

William E. Vaughan
Bell, Boyd & Lloyd LLC
P.O. Box 1135
Chicago, IL 60690-1135



SIGNATURE

William E. Vaughan

NAME

39,056

REGISTRATION NUMBER

January 31, 2001

DATE

09/762011

JCG7 Rec'd PCT/PTO 31 JAN 2001
BOX PCT

IN THE UNITED STATES ELECTED/DESIGNATED OFFICE
OF THE UNITED STATES PATENT AND TRADEMARK OFFICE
UNDER THE PATENT COOPERATION TREATY-CHAPTER II

5

PRELIMINARY AMENDMENT

APPLICANT: Andreas Gustke DOCKET NO: 112740-145

SERIAL NO: GROUP ART UNIT:

10

EXAMINER:

INTERNATIONAL APPLICATION NO: PCT/DE99/02002

INTERNATIONAL FILING DATE: 01 July 1999

15

INVENTION: A COMMUNICATION SYSTEM INCLUDING AT LEAST
ONE RADIO BASE STATION TO WHICH RADIO
NETWORK TERMINATING FACILITIES FOR
CONNECTING COMMUNICATION TERMINALS CAN BE
CONNECTED

20

Assistant Commissioner for Patents,
Washington, D.C. 20231

25

Sir:
Please amend the above-identified International Application before entry
into the National stage before the U.S. Patent and Trademark Office under 35 U.S.C.
§371 as follows:

In The Specification:

On amended page 1, cancel lines 1-6 and substitute the following therefor:

--S P E C I F I C A T I O N

TITLE

30

**A COMMUNICATION SYSTEM INCLUDING AT LEAST ONE RADIO
BASE STATION TO WHICH RADIO NETWORK TERMINATING
FACILITIES FOR CONNECTING COMMUNICATION TERMINALS
CAN BE CONNECTED**

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a communication system which includes at least one radio base station to which radio network terminating facilities can be connected, wherein additional wireless communication relations via which 5 information can be switched directly between the network terminating facilities are provided between the network terminating facilities.

Description of the Prior Art--.

On amended page 1, line 9, can the “-“ and substitute therefor a --(--.

On amended page 1, line 10, cancel “, respectively”.

10 On amended page 1, line 10, cancel the “-“ and substitute therefor --),--.

On amended page 1, line 11, insert a --,-- after “are”.

On amended page 1, line 11, insert a --,-- after “case”.

On amended page 1, line 12, cancel the “-“ and substitute therefor a --(--.

On amended page 1, lines 12-13, cancel “, respectively”.

15 On amended page 1, line 13, cancel the “-“ and substitute therefor --),--.

On amended page 1, line 17, cancel the “-“ and substitute therefor a --,-- (occurs twice).

On amended page 1, line 21, cancel the “-“ and substitute therefor a --,-- (occurs twice).

20 On amended page 1, line 22, insert --period of-- after “short”.

On amended page 1, line 34, cancel the “,”.

On amended page 2, lines 12-13, cancel “arrangement comprising” and substitute therefor --system having--.

On amended page 2, line 14, cancel the “,”.

25 On amended page 2, line 20, insert a --,-- after “is”.

On amended page 2, line 20, insert a --,-- after “case”.

On amended page 2, line 22, cancel “by means of” and substitute therefor --either via--.

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JULY 19 1999

On amended page 2, line 23, cancel "by means of" and substitute therefor --via--.

On amended page 2, line 27, insert --which is-- after "relations".

On amended page 2, line 31, insert --present-- before "invention".

5 On amended page 2, line 31, cancel "based on the object of" and substitute therefor --directed to--.

On amended page 2, line 36, cancel "The".

On amended page 2a, cancel lines 1-2.

On amended page 3, cancel lines 1-2 and substitute the following centered

10 heading therefor:

--SUMMARY OF THE INVENTION--

On amended page 3, line 3, cancel "In" and substitute therefor --

Accordingly, in--.

On amended page 3, line 3, cancel "arrangement" and substitute therefor --

15 system--.

On amended page 3, line 4, insert --present-- before "invention".

On amended page 3, line 6, insert --wherein-- before "first".

On amended page 3, line 7, cancel "being" and substitute therefor --are--.

On amended page 3, line 9, cancel "The essential" and substitute therefor

20 --A key--.

On amended page 3, line 10, cancel "arrangement according to" and substitute therefor --system of--.

On amended page 3, line 11, insert --present-- before "invention".

On amended page 3, line 11, cancel "consists in" and substitute therefor --

25 is--.

On amended page 3, line 12, cancel "exhibit" and substitute therefor --have--.

On amended page 13, line 13, cancel "means" and substitute therefor --capabilities--.

On amended page 3, line 14, cancel “, the” and substitute therefor --; such--.

On amended page 3, line 14, cancel “means” and substitute therefor --capabilities--.

On amended page 3, line 18, cancel “The essential” and substitute therefor
5 --An--.

On amended page 3, line 19, cancel “arrangement according to” and substitute therefor --system of--.

On amended page 3, line 19, insert --present-- before “invention”.

On amended page 3, line 19, cancel “consists in” and substitute therefor --
10 is--.

On amended page 3, line 20, cancel the “-“ before “voice” and substitute therefor a --(--.

On amended page 3, line 20, cancel the “-“ after “data” and substitute therefor --),--.

15 On amended page 3, line 24, cancel the “,” and substitute therefor a --(--.

On amended page 3, line 24, insert a --,-- after “i.e.”.

On amended page 3, line 25, insert a --)-- after “controllers”.

On amended page 3, line 25, cancel “component” and substitute therefor --components--.

20 On amended page 3, line 32, cancel “step by step” and substitute therefor --step-by-step--.

On amended page 3, line 36, cancel the “-“ and substitute therefor a --(--.

On amended page 3a, line 2, cancel “e.g.” and substitute therefor --such as--

25 On amended page 3a, line 3, insert a --)-- after “rate”.

On amended page 3a, line 4, insert a --,-- after “networks”.

On amended page 3a, line 6, cancel “advantageous”.

On amended page 3a, line 6, insert --of the present invention-- after “embodiment”.

PCT/EP2019/052260

On amended page 3a, line 7, cancel “means” and substitute therefor -- capabilities--.

On amended page 3a, line 7, cancel “constructed in” and substitute therefor --effected--.

5 On amended page 3a, line 7, cancel “a manner”.

On amended page 3a, line 9, cancel “units” and substitute therefor -- facilities--.

On amended page 3a, line 11, cancel “unit – claim 2” and substitute therefor --facility--.

10 On amended page 3a, lines 16-17, cancel “, which” and substitute therefor --. The--.

On amended page 3a, line 19, insert --radio-- before “network”.

On amended page 3a, line 19, cancel “units” and substitute therefor -- facilities--.

15 On amended page 3a, line 23, cancel the ““ and substitute therefor a --;--.

On amended page 3a, line 23, insert a --,-- after “e.g.”.

On amended page 3a, line 23, insert --radio-- after “exchanging”.

On amended page 3a, line 24, cancel “units” and substitute therefor -- facilities--.

20 On amended page 3a, line 26, cancel “an advantageous” and substitute therefor --a--.

On amended page 3a, line 27, insert --of the present invention-- after “development”.

On amended page 3a, line 29, cancel “the” and substitute therefor --a--.

25 On amended page 3a, line 30, cancel “- claim 3”.

On amended page 3a, line 30, insert --yet-- after “to”.

On amended page 3a, line 30, cancel “further”.

On amended page 3a, lines 34-35, cancel “- claim 4”.

On amended page 3a, line 35, cancel “further”.

On amended page 3b, line 7, cancel the “-“ and substitute therefor a --,--.

On amended page 3b, line 7, insert a --,-- after “example”.

On amended page 3b, line 11, cancel “means” and substitute therefor --capabilities--.

5 On amended page 3b, line 14, cancel “units” and substitute therefor --facilities--.

On page 4, line 2, cancel “- claim 7”.

On page 4, line 4, cancel the “-“ and substitute therefor --, which were--.

On page 4, line 5, cancel the “-“ and substitute therefor a --,--.

10 On page 4, line 6, insert --radio-- before “network”.

On page 4, line 7, cancel “units” and substitute therefor --facilities--.

On page 4, line 12, cancel “can”.

On page 4, line 12, insert --can-- after “also”.

On page 4, line 14, cancel “a further” and substitute therefor --another--.

15 On page 4, line 14, insert --of the present invention-- after “embodiment”.

On page 4, line 15, cancel “means” and substitute therefor --capabilities--.

On page 4, line 15, cancel “constructed in” and substitute therefor --effected--.

On page 4, line 15, cancel “a manner”.

20 On page 4, line 22, cancel “- claim 8”.

On page 4, line 22, cancel “Due to this advantageous embodiment” and substitute therefor --As a result--.

On page 4, line 24, cancel “units” and substitute therefor --facilities--.

On page 4, line 26, cancel the “-“ and substitute therefor a --,--.

25 On page 4, line 26, insert a --,-- after “example”.

On page 4, line 29, cancel “As” and substitute therefor --Pursuant to--.

On page 4, line 29, cancel “advantageous”.

On page 4, line 29, insert --of the present invention-- after “embodiment”.

On page 4, line 30, cancel “unit” and substitute therefor --facility--.

On page 4, line 32, cancel “- claim 11”.

On page 4, line 34, cancel “for example” and substitute therefor --such as--.

On page 4, line 37, cancel “a further advantageous” and substitute therefor
--another--.

5 On page 4, line 37, insert --of the present invention-- after “embodiment”.

On page 4, line 38, cancel “units” and substitute therefor --facilities--.

On page 4, line 39, cancel “means for implementing” and substitute therefor
--capabilities to implement--.

On page 5, lines 2-3, cancel “- claim 15”.

10 On page 5, line 7, cancel the “-“ before “LANs” and substitute therefor a --
(--.

On page 5, line 7, cancel the “-“ after “LANs” and substitute therefor a --)--.

On page 5, line 8, cancel the “-“ before “WANs” and substitute therefor a
--(--.

15 On page 5, line 8, cancel the “-“ after “WANs” and substitute therefor a --)-
-.

On page 5, line 12, cancel the “,” and substitute therefor a --;--.

On page 5, line 12, insert a --,-- after “i.e.”.

On page 5, cancel lines 20-26 and substitute the following therefor:

20 --Additional features and advantages of the present invention are described
in, and will be apparent from, the following Detailed Description of the Preferred
Embodiments and the Drawings.

DESCRIPTION OF THE DRAWINGS

Figure 1 shows a communication system of the present invention wherein
25 a number of radio network terminating facilities are connected to a radio base station.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--

On page 5, line 27, insert --of Figure 1-- after “diagram”.

On page 5, line 28, cancel “arrangement” and substitute therefor --system--.

On page 5, line 29, cancel “units” and substitute therefor --facilities--.

On page 5, line 35, cancel “arrangement” and substitute therefor --system--.

On page 5, line 37, cancel the “-“ before “also” and substitute therefor a --(-

5 On page 5, line 37, cancel the “-“ after “network” and substitute therefor a
--)--.

On page 5, line 38, cancel the “-“ before “also” and substitute therefor a --)-

10 On page 6, line 1, insert a --)-- after “system”.

On page 6, line 2, cancel “unit” and substitute therefor --facility--.

On page 6, line 3, cancel the “-“ and substitute therefor --which is---.

On page 6, line 6, cancel “or” after “terminal” and substitute therefor a --,--.

On page 6, line 11, cancel the “-“ and substitute therefor --, which is--.

On page 6, line 12, cancel the “-“ and substitute therefor a --,--.

On page 6, line 18, cancel “can”.

15 On page 6, line 18, insert --can-- after “also”.

On page 6, line 23, cancel the “,” after “interface” and substitute therefor a
--;--.

On page 6, line 23, insert a--,-- after “example”.

On page 6, lines 23-24, cancel “, i.e.” and substitute therefor ---. That is,--.

20 On page 6, line 25, cancel “units” and substitute therefor --facilities--.

On page 6, line 29, insert --present-- before “invention”.

On page 6, line 30, cancel “unit” and substitute therefor --facility--.

On page 6, line 31, cancel “can”.

On page 6, line 36, cancel “means” and substitute therefor --functions--.

25 On page 6, line 36, cancel the “-“ before “not” and substitute therefor a --(--.

On page 6, line 36, cancel the “-“ after “shown” and substitute therefor a --
)--.

On page 7, line 1, cancel “units” and substitute therefor --facilities--.

On page 7, line 4, cancel “units” and substitute therefor --facilities--.

On page 7, line 9, cancel the “-“ before “illustrated” and substitute therefor --which is--.

On page 7, line 9, cancel the “-“ after “border” and substitute therefor a --,--

5 On page 7, line 18, cancel the “,” after “modulation”.

 On page 7, line 21, cancel “said” and substitute therefor --these--.

 On page 7, line 26, cancel “said” and substitute therefor --the--.

 On page 7, line 27, cancel the “-“ before “which” and substitute therefor a --(--.

10 On page 7, line 28, cancel the “-“ and substitute therefor a --)--.

 On page 7, line 28, insert a --,-- after “MC-DS-CDMA”.

 On page 7, line 29, cancel the “-“ before “multitone” and substitute therefor a --)--.

 On page 7, line 29, cancel the “-“ after “CDMA” and substitute therefor a --)--.

15 On page 7, line 33, cancel “units” and substitute therefor --facilities--.

 On page 7, line 35, cancel “by means of” and substitute therefor --via--.

 On page 7, line 38, insert a --,-- after “are”.

 On page 7, line 38, insert a --,-- after “case”.

20 On page 8, line 12, cancel the “-“ and substitute a --(--.

 On page 8, line 12, insert a --,-- after “e.g.”.

 On page 8, line 14, insert --radio-- after “individual”.

 On page 8, line 15, cancel “units” and substitute therefor --facilities--.

 On page 8, line 15, cancel the “-“ and substitute therefor a --(--.

25 On page 8, line 18, insert --radio-- after “neighboring”.

 On page 8, line 27, cancel the “,” and substitute therefor a --(--.

 On page 8, line 27, insert a --,-- after “i.e.”.

 On page 8, line 29, insert a --)-- after “zkb”.

 On page 8, line 30, cancel the “,”.

On page 8, line 30, insert --radio-- before “network”.

On page 8, line 31, insert --radio-- before “network”.

On page 8, line 32, insert a --,-- after “RNT4”.

On page 8, line 34, insert --radio-- before “network”.

5 On page 8, line 34, cancel the “-“ and substitute therefor a --(--.

On page 8, line 35, cancel the “-“ and substitute therefor a --)--.

On page 8, line 37, cancel the “-“ and substitute therefor a --(--.

On page 8, line 38, insert a --)-- after “p2”.

On page 9, line 12, cancel “unit” and substitute therefor --facility--.

10 On page 9, line 13, cancel the “-“ and substitute therefor a --,--.

On page 9, line 15, cancel the “-“ and substitute therefor a --,--.

On page 9, line 20, cancel “units” and substitute therefor --facilities--.

On page 9, line 25, cancel the “-“ and substitute therefor a --;--.

On page 9, line 25, insert a --,-- after “example”.

15 On page 9, line 36, cancel “arrangement” and substitute therefor --system--.

On page 10, line 5, cancel the “-“ and substitute therefor a --;--.

On page 10, line 6, insert a --,-- after “example”.

On page 10, line 6, cancel the “,” after “computer” and substitute therefor
a --(--.

20 On page 10, line 6, cancel the “-“ and substitute therefor a --)--.

On page 10, line 20, insert --radio-- before “network”.

On page 10, line 20, cancel “unit” and substitute therefor --facility--.

On page 10, line 24, cancel “are” and substitute therefor --is--.

On page 10, line 25, cancel “and” before “the” and substitute therefor --

25 with--.

On page 10, line 25, cancel “is” and substitute therefor --being--.

On page 10, line 26, insert --radio-- before “network”.

On page 10, line 26, cancel “unit” and substitute therefor --facility--.

On page 10, line 37, insert --radio-- before “network”.

On page 10, line 37, cancel “unit” and substitute therefor --facility--.

On page 11, line 6, cancel “units” and substitute therefor --facilities--.

On page 11, line 9, insert --radio-- before “network”.

On page 11, line 10, cancel “unit” and substitute therefor --facility--.

5 On page 11, line 21, cancel “, and the” and substitute therefor --. The--.

On page 11, line 34, cancel the “-“ and substitute therefor a --,--.

On page 11a, line 2, insert a --,-- after “by”.

On page 11a, line 2, insert a --,-- after “case”.

On page 12, after line 9, insert the following paragraph:

10 --Although the present invention has been described with reference to specific embodiments, those of skill in the art will recognize that changes may be made thereto without departing from the spirit and scope of the invention as set forth in the hereafter appended claims.--

On page 17 (last page), cancel lines 1-6 and substitute the following centered heading therefor::

15 **--ABSTRACT OF THE DISCLOSURE--**

On page 17, line 8, cancel “arrangement comprising” and substitute therefor --system including--.

On page 17, line 9, cancel “(RBS)”.

20 On page 17, line 10, cancel “(RNT1...5)”.

On page 17, line 12, cancel “(zkb)”.

On page 17, line 13, cancel “(RNT1...5)”.

On page 17, line 15, cancel “(RNT1...5)”.

On page 17, line 15, cancel “(kb)”.

25 On page 17, line 16, cancel “(RBS)”.

On page 17, line 17, cancel “(RNT1...5)”.

On page 17, line 17, cancel “A gradual migration”.

On page 17, cancel lines 18-21.

In the Claims:

On amended page 13, cancel line 1, and substitute the following left-hand justified heading therefor:

--I Claim As My Invention:--

5 Please cancel claims 1-15, without prejudice, and substitute the following claims therefor:

16. A communication system, comprising:

at least one radio base station to which radio network terminating facilities for connecting communication terminals can be connected;

10 first communication relations provided between the radio base station and the radio network terminating facilities within a first communication network; and

additional transmission and switching means in the radio network terminating facilities for implementing at least one further communication network, wherein the additional transmission and switching means provide for implementing
15 additional wireless communication relations between the radio network terminating facilities.

17. A communication system as claimed in claim 16, further comprising:

20 at least one further radio network terminating facility, wherein the additional wireless communication relations are switched via the at least one further radio network terminating facility.

18. A communication system as claimed in claim 16, wherein the
25 at least one further communication network is provided for implementing additional wireless communication relations in a home domain.

19. A communication system as claimed in claim 16, wherein the first communication network is a public communication network and the at least one
30 further communication network is a private communication network.

20. A communication system as claimed in claim 16, wherein the additional transmission and switching means includes switching and transmission routines, implemented as programs, for implementing the additional wireless communication relations.

5

21. A communication system as claimed in claim 16, wherein at least one of a connection-oriented wireless communication network and a connectionless wireless communication network is formed with the aid of the additional wireless communication relations.

10

22. A communication system as claimed in claim 16, wherein a self-configuring wireless communication network having a neural network structure is formed with the aid of the additional wireless communication relations.

15

23. A communication system as claimed in claim 21, wherein information to be transmitted is inserted into packet-oriented data streams and the packet-oriented data streams are switched via the wireless communication network, and wherein services based on Internet protocol are implemented with the aid of the wireless communication network.

20

24. A communication system as claimed in claim 22, wherein information to be transmitted is inserted into packet-oriented data streams and the packet-oriented data streams are switched via the wireless communication network, and wherein services based on Internet protocol are implemented with the aid of the wireless communication network.

25

25. A communication system as claimed in claim 16, further comprising:

means for implementing the communication relations in the radio base station and in the radio network terminating facilities, wherein data streams to be transmitted from the radio base station to the radio network terminating facilities are transmitted in accordance with at least one of a TDM-oriented, FDM-oriented and
5 CDM-oriented multiple transmission method, and wherein data streams to be transmitted from the radio network terminating units to the radio base station are transmitted according to at least one of a TDMA, CDMA and FDMA access transmission method.

10 26. A communication system as claimed in claim 16, wherein the additional wireless communication relations are implemented with the aid of one of an MC-CDMA multiple access method, a COFDM modulation, and a multiple access method conforming to CDMA.

15 27. A communication system as claimed in claim 16, wherein at least one of the radio network terminating facilities includes at least one further connection to an additional communication network.

20 28. A communication system as claimed in claim 16, wherein at least one of the radio network terminating units additionally represents a repeater network terminating unit.

25 29. A communication system as claimed in claim 16, wherein at least one of the radio network terminating units includes further means for encrypting information to be transmitted with the aid of the additional wireless communication relations.

30. A communication system as claimed in claim 16, wherein at least one of the radio network terminating units includes further means for

compressing information to be transmitted with the aid of the additional wireless communication relations.

31. A communication system as claimed in claim 16, wherein at
5 least one the radio network terminating units includes means for implementing a
wireless packet-oriented communication system according to ITU Recommendation
H.323 or H.324.

REMARKS

10 The present amendment makes editorial changes and corrects typographical errors in the specification in order to conform the specification to the requirements of the United States Patent practice. No new matter is added thereby. Original claims 1-15 have been canceled in favor of new claims 16-31. Claims 16-31 have been presented solely because the revisions by bracketing and underlining which
15 would have been necessary in claims 1-15 in order to present those claims in accordance with preferred United States Patent practice would have been too extensive, and thus would have been too burdensome. The amendment is intended for clarification purposes only and not for substantial reasons related to patentability pursuant to 35 U.S.C. §§101, 102, 103 or 112. Indeed, the cancellation of claims 1-
20 15 does not constitute an intent on the part of the Applicant to surrender any of the subject matter of claims 1-15.

Early consideration on the merits is respectfully requested.

Respectfully submitted,



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IN THE UNITED STATES ELECTED/DESIGNATED OFFICE
OF THE UNITED STATES PATENT AND TRADEMARK OFFICE
UNDER THE PATENT COOPERATION TREATY-CHAPTER II

5

PRELIMINARY AMENDMENT

APPLICANT: Andreas Gustke DOCKET NO: 112740-145

SERIAL NO: GROUP ART UNIT:

10

EXAMINER:

INTERNATIONAL APPLICATION NO: PCT/DE99/02002

INTERNATIONAL FILING DATE: 01 July 1999

15

INVENTION: A COMMUNICATION SYSTEM INCLUDING AT LEAST
ONE RADIO BASE STATION TO WHICH RADIO
NETWORK TERMINATING FACILITIES FOR
CONNECTING COMMUNICATION TERMINALS CAN BE
CONNECTED

20 Assistant Commissioner for Patents,
Washington, D.C. 20231

Sir:

Please amend the above-identified International Application before entry
into the National stage before the U.S. Patent and Trademark Office under 35 U.S.C.
25 §371 as follows:

In The Specification:

On amended page 1, cancel lines 1-6 and substitute the following therefor:

--S P E C I F I C A T I O N

TITLE

30 A COMMUNICATION SYSTEM INCLUDING AT LEAST ONE RADIO
BASE STATION TO WHICH RADIO NETWORK TERMINATING
FACILITIES FOR CONNECTING COMMUNICATION TERMINALS
CAN BE CONNECTED

BACKGROUND OF THE INVENTION

JU07 Rec'd PCN/PD 31 JAN 2001

Description

Communication arrangement comprising at least one radio base station to which radio network 5 terminating facilities for connecting communication terminals can be connected.

In wireless communication networks based on radio channels, especially in point-to-multipoint radio feeder networks - also called "radio in the local loop" 10 or, respectively "RLL" - a number of network terminating units are in each case connected to a base station - also called "radio base station" or, respectively "RBS" - via one or more radio channels. In telecom Report No. 18 (1995), Vol. 1 "Drahtlos zum 15 Freizeichen", (wirelessly to the ringing-tone signal), page 36, 37, for example, a wireless feeder network - also called subscriber access network - for wireless voice and data communication is described. The communication system described represents an RLL 20 subscriber line in combination with modern broadband infrastructure - e.g. "fiber to the curb" - which can be implemented within a short time and without great expenditure, instead of running wire-connected subscriber lines. The network terminating units RNT 25 allocated to the individual subscribers are connected to a high-level communication network, for example to the ISDN-oriented fixed network, via the "radio channel" transmission medium and the base station RBS.

In EP 0 689 303 A, a wireless TDMA-oriented 30 communication system is described in which a number of wireless communication terminals or mobile telephones are connected to a radio base station. The wireless communication system represents a wireless TDMA-oriented communication network, in which first 35 information items can be exchanged between the wireless

10-10-2000
GR 98 P 2230
PCT/DE99/02002

- 1a -

DE 009902002

communication terminals and the radio base station

in accordance with a time-slot-oriented or TDMA-oriented transmission protocol. In this arrangement, this information is transmitted via a first transmission frequency. In addition, other 5 information items modulated on a second carrier wave with a second carrier frequency can be transmitted directly between two wireless communication terminals. The additional information is then transmitted in accordance with the same TDMA protocol in accordance 10 with which the first information items are also transmitted.

Furthermore, a communication arrangement comprising at least one radio base station with mobile radio telephones connected thereto is described, in 15 which first communication relations between the radio base station and the mobile radio telephones are provided. The mobile radio telephones are designed in such a manner that direct communication with a further mobile radio telephone of the same type of construction 20 is in each case possible without involving the mobile radio network. Direct communication between the mobile radio telephones takes place by means of additional frequencies or by means of special coding methods, the direct communication between two mobile radio 25 telephones only being possible if these are arranged spatially close enough to one another. The additional communication relations thus made possible between two mobile radio telephones can only be set up as direct connections between two mobile radio telephones "in the 30 manner of a walkie-talkie".

The invention is based on the object of expanding current wireless communication networks based on a hierarchical structure, especially wireless subscriber access networks, by additional features and 35 possible applications which are of interest both to the user and to the communication network operator. The

10-10-2000
GR 98 P 2230
PCT/DE99/02002

- 2a -

DE 009902002

object is achieved on the basis of a communication arrangement according to the features

of the preamble of claim 1 by its characterizing features.

In the communication arrangement according to the invention, radio network terminating facilities for connecting communication terminals can be connected to at least one radio base station, first communication relations being provided between the radio base station and the radio network terminating facilities within a first communication network. The essential aspect of the communication arrangement according to the invention consists in that the radio network terminating facilities exhibit additional transmission and switching means for implementing at least one further communication network, the additional means being provided for implementing additional wireless communication relations between the radio network terminating facilities.

The essential advantage of the communication arrangement according to the invention consists in that information - voice, video or other data - can be switched directly between network terminating units arranged in a subscriber access network. Shifting switching functions which were previously arranged centrally, i.e. in the base stations or in their controllers, as network intelligence component into the network terminating units which are wirelessly connected to the base station enables the communication network operators to migrate step by step towards combined wireless communication networks with a decentralized organization. Creating the possibility of converting hierarchically structured communication networks step by step and in a demand-related manner into communication networks with a decentralized organization and, in particular, adapting wireless subscriber access networks to the future subscriber requirements - chronologically unlimited utilization of

broadband services and billing of any costs on the basis of a transparent tariff model, e.g. a monthly flat rate, enhances the acceptance, particularly of wireless subscriber access networks and accelerates
5 their market penetration.

According to an advantageous embodiment, the additional means are constructed in such a manner that the additional wireless communication relations between at least two radio network terminating units are
10 switched via at least one further radio network terminating unit - claim 2. Advantageously equipping the radio network terminating facilities with repeater functions makes it possible to implement an additional, closely intermeshed wireless communication network
15 within the subscriber access network without great time expenditure and with minimum technical complexity, which additional communication network can be operated independently of the communication relations between the network terminating units and the radio base
20 station. Advantageously, the infrastructure of wireless subscriber access networks already installed can be used for implementing the additional wireless communication network - e.g. by exchanging network terminating units already installed in a wireless
25 subscriber access network.

According to an advantageous further development, the at least one further communication network is provided for implementing additional wireless communication relations in the home domain - claim 3. According to another further development, the first communication network is constructed as a public communication network and the at least one further communication network is constructed as a private communication network - claim
30 4. Due to these advantageous further developments, wireless communication networks currently to be
35

installed, especially public wireless subscriber access networks for transmitting POTS (plain old telephone service) services, can be adapted to the customer requirements without great expenditure by setting up an additional communication network or private communication network in the home domain which can be operated in parallel - for example setting up inexpensive modem access points for the wireless connection of personal computers to higher-level computer networks.

The additional means are advantageously constructed in such a manner that, with the aid of the wireless communication relations between the radio network terminating units, a self-

configuring wireless communication network having a neural network structure is formed - claim 7. This advantageous embodiment makes it possible to shift the switching functions - previously implemented in the 5 radio base stations - as part of the network intelligence into the peripherals of the network terminating units as a result of which the economic expenditure for implementing additional wireless communication networks is minimized. Advantageously, 10 wireless communication networks without radio base stations and the central switching functions arranged therein can also be implemented with little economic expenditure.

According to a further advantageous embodiment, 15 the additional means are constructed in such a manner that information to be transmitted is inserted into packet-oriented data streams and the packet-oriented data streams are switched via the wireless communication network. Services based on the Internet 20 protocol - also called IP services - are implemented with the aid of the wireless communication network - claim 8. Due to this advantageous embodiment, the subscribers connected to the radio network terminating units can be provided inexpensively with 25 current IP services based on the Internet technology - for example transmission and reception of E-mail, transmission of files or utilization of the world wide web.

As a further advantageous embodiment, at least 30 one radio network terminating unit exhibits at least one further connection to a second communication network - claim 11. This further connection can be constructed, for example, as access point to a higher-level communication network, for example to an 35 IP-based communication network of a further network operator.

According to a further advantageous embodiment, the radio network terminating units exhibit further means for implementing

a wireless packet-oriented communication system according to ITU Recommendation H.323 or H.324 - claim 15. IT Recommendation H.323 specifies communication systems via which audio, video and other data are transmitted via packet-based or packet-oriented communication networks. Packet-oriented networks can represent both local area networks - LANs - and wide area networks - WANs - and Intranets or the Internet. Advantageously, a communication system according to Recommendation H.323 or, respectively, H.324 can be implemented independently of the basic physical network topology, i.e. incompatibilities between products of different manufacturers in the case of multimedia communication via packet-oriented communication networks are illuminated. Advantageously, IP-based communication networks can be connected to normal telephone networks for implementing pure voice connections with the aid of the Voice over Internet Protocol (VoIP) standard.

Further advantageous embodiments of the communication arrangement according to the invention can be found in the further claims.

In the text which follows, the communication arrangement according to the invention will be explained in greater detail with the aid of a block diagram.

The block diagram shows a communication arrangement which is arranged in a coverage area and in which a number of radio network terminating units RNT1...5 are connected via the wireless "radio channel" transmission medium or, respectively, via wireless communication relations KB to a radio base station RBS representing the center of the coverage area or, respectively, the radio area FB. In this exemplary embodiment, the communication arrangement represents a public wireless subscriber access network or ACCESS - also called ACCESS network - for example based on a CDMA multiple access method - also called wireless

local loop "WLL" system. At the subscriber end, each network terminating unit RNT1...5 can be connected to at least one decentralized communication terminal - not shown. A decentralized communication terminal can be 5 implemented, for example, by a multimedia communication terminal or an ISDN-oriented telephone terminal or by a personal computer. The radio base station RBS is connected to a radio base station controller RBC via a connecting line. The radio base station controller RBC 10 is connected via a copper line or an optical waveguide or a microwave feeder system - indicated by VL in the block diagram - to a radio distribution unit RDU in which the voice transcoding and the administration of the resources of the radio area FB and of the resources 15 in the direction of the higher-level ISDN-oriented communication network IKN takes place, among other things. As an alternative, the radio resources of the respective radio area FB can also be administered or, respectively, offered and allocated in the radio base 20 station RBS or in the radio base station controller RBC. The radio distribution unit RDU is connected to the public fixed network via a standardized V5.1 interface, for example by an optical waveguide LWL, i.e. all decentralized communication terminals 25 connected to the radio network terminating units RNT1...5 are connected to the higher-level, ISDN-oriented communication network IKN via the wireless subscriber access network or ACCESS.

According to the invention, each decentralized 30 radio network terminating unit RNT1...5 exhibits, in addition to the radio interface which, for example, can also be constructed in accordance with the DECT standard, for implementing the "WLL system" already described or, respectively, for implementing the public 35 subscriber access network or ACCESS, additional radio means - not shown - for implementing a further radio interface. Via the further radio interface, additional wireless communication relations zkb are set up between

the decentralized radio network terminating units RNT1...5 arranged in the subscriber access network or ACCESS, with the aid of which the radio network terminating units RNT1...5 are connected to one another
5 in a closely intermeshed manner. Due to the additional wireless communication relations, an additional wireless communication network PN, for example a private communication network PN arranged in a city district - illustrated by a dotted border - is
10 implemented in parallel with the public wireless subscriber access network or ACCESS which already exists. In the text which follows, the additional wireless communication network PN implemented with the aid of the additional wireless communication relations
15 zkb is also called a private communication network PN.

The further radio interface is based, for example, on the combination of a multicarrier modulation or, respectively, MC modulation, and a spread-spectrum technology in transmission; the
20 combination is also called multicarrier spread-spectrum MC-SS. Combining said transmission techniques also results in a combination of the advantages of the transmission techniques: higher flexibility, higher spectrum efficiency, simpler detection possibilities
25 and avoidance of narrow-band interference. As variants of embodiments of said MC-SS multiple access methods, MC-CDMA - which results from a combination of DS-CDMA with MC modulation - or MC-DS-CDMA or
30 MT-CDMA - multitone CDMA - can be mentioned. As an alternative, the further radio interface can be constructed, for example, in accordance with the DECT standard. The close intermeshing of the individual radio network terminating units RNT1...5 arranged in the subscriber access network or ACCESS, which is effected
35 by means of the additional communication relations zkb, provides for direct communication of each radio network terminating facility RNT1...5 with the radio network terminating facilities RNT1...5 which are in each case

locally adjacent so that control and addressing data
can be arbitrarily exchanged between adjacent

radio network terminating facilities RNT1...5. Since this provides for autoconfiguration during the initialization of a network terminating facility RNT1...5 and for automatic routing during the setting-up of a connection via the radio network terminating facilities RNT1...5 which are arranged in the subscriber access network or ACCESS and have mutually equal access authorization, the private communication network PN implemented with the aid of the additional wireless communication relations zbk attains the characteristic of a self-learning neural network. Thus, instead of manual, cellular communication network planning - e.g. by manually configuring the connection and routing tables stored in the individual network terminating units RNT1...5 - the private communication network PN is self-configured. In self-configuration, the frequency range and the transmitting level are tuned to the neighboring network terminating facilities RNT1...5 found by each radio network terminating facility RNT1...5 newly added to the wireless subscriber access network or ACCESS during the initialization. Furthermore, adaptive antennas and their controllable directional pattern provide for dynamic power matching.

Depending on the state of configuration of the connection and routing tables stored in the individual radio network terminating facilities RNT1...5 and depending on the traffic load, i.e. depending on the loading on the individual additional wireless communication relations zkb, data to be transmitted, for example, from the second network terminating facility RNT2 to the fourth network terminating facility RNT4 are transmitted either via the radio channel set up directly between the second and fourth network terminating facility RNT2, 4 - illustrated by a first dot-dashed arrow p1 - or alternatively via the third radio network terminating facility RNT3 acting as relay station or repeater station - illustrated by a second dot-dashed arrow p2. Each radio

network terminating facility RNT1...5 arranged within the private communication network PN can represent an originating and/or terminating point of a connection operated via the private communication network PN and, 5 at the same time, fulfill the function of a repeater or relay station for other connections operated via the private communication network PN. The private communication network PN can be constructed both as a packet-oriented communication network PN or as a 10 circuit-oriented communication network PN. In a packet-oriented private communication network PN, each radio network terminating unit RNT1...5 arranged therein represents a network node via which data packets - with the routing information arranged therein and user 15 information to be transmitted - are readdressed and forwarded with the aid of the stored routing tables. In a circuit-oriented private communication network PN, each current connection is based on a circuit-switched radio channel via an arbitrary number of radio network 20 terminating units RNT1...5.

In the present exemplary embodiment, the fourth radio network terminating facility RNT4 is connected via a subscriber line AL to a packet-oriented communication network IP conforming to the Internet 25 Protocol - for example a communication network connecting a number of private communication networks PN, also called "backbone". Advantageously, transitions between communication networks having different transmission or access protocols can be implemented by 30 interposing special conversion units, also called gateways. As examples, transitions to X.25 communication networks or frame-relay communication networks or virtual telephone networks can be mentioned.

35 According to an advantageous variant of the embodiment of the communication arrangement shown, the private communication network PN implemented with the aid of the additional wireless communication relations zkb is constructed as

communication system according to ITU Recommendation H.323 - packet-based multimedia communication systems - or, respectively, H.324 - low bitrate multimedia communication, in which at least audio communication is supported by each local communication terminal - for example a personal computer, not shown - connected to a radio network terminating facility RNT1...5. In contrast, processing and transportation of video and other data is optional. Communication terminals constructed in accordance with ITU Recommendation, H.323 or, respectively, H.324 can be, for example, functionally integrated in the personal computer or implemented as stand-alone solution. An H.323 communication system exhibits a number of logical units which are called "terminal", "gateway", "gatekeeper" and "multipoint control unit (MCU)". In the present exemplary embodiment, each radio network terminating unit RNT1...5 arranged in the subscriber access network or ACCESS represents a logical unit according to Recommendation H.323. A network terminating unit RNT1...5 implementing the function of an H.323 terminal can communicate, for example, with another H.323 terminal, gateway or multipoint control unit (MCU) in real time and it is mainly voice data which are transmitted in real time and the transmission of video and other data is supported additionally. A network terminating unit RNT1...5 implementing the function of an H.323 gateway can communicate, for example, with other H.323 gateways or with H.323 terminals in circuit-oriented communication networks IP. Circuit-oriented communication networks can be, for example, the ISDN network, the ATM network or the conventional analog telephone network. A number of private communication networks PN implemented in wireless subscriber access networks or ACCESS, for example, can be connected via such a connection-oriented communication network IP. A network terminating unit RNT1...5 implementing the function of multipoint control unit (MCU) enables three or more H.323 terminals or H.323 gateways to

participate in multipoint connections or in conferences, respectively.

In a private communication network PN constructed in accordance with ITU Recommendation H.323, multimedia connections from the radio network terminating units RNT1...5 arranged in the private communication network PN or, respectively, from the communication terminals connected thereto to the communication network IP connected to the fifth network terminating unit RNT5 or, respectively, corresponding multimedia connections to further private communication networks connected thereto can be implemented between networks. In this arrangement, a protocol conversion between the transmission protocols used in each case in the communication networks PN, IP is carried out by correspondingly designed gateways. Pure voice connections can be advantageously switched between the individual closely intermeshed radio network terminating facilities RNT1...5 arranged in the subscriber access network or ACCESS or, respectively, in the private communication network PN, and the voice data transmitted via the private communication network PN can be retransmitted with the aid of the Voice over Internet Protocol (VoIP) standard via a communication network IP constructed in accordance with the Internet Protocol standard.

Switching voice data and all other types of multimedia data within the private communication network PN described and the possibility of retransmitting the multimedia data via the higher-level communication network IP represents an alternative possibility of switching data compared with conventional transmission paths implemented in the current wireless subscriber access networks or ACCESS - such as, for example, via the radio base station RBS and via the ISDN-oriented fixed network IKN connected to the radio base station RBS. The subscriber access network or ACCESS and the private communication network PN implemented therein in each case represent

independent communication networks which can be operated by in each case

different communication network operators or providers. The parallel arrangement of a number of independent wireless communication networks or ACCESS, PN within the same radio area FB makes it possible to implement 5 subscriber access networks or ACCESS which can be designed to be flexible and which can be adapted to the new requirements of the subscribers connected to them within a short period of time and with the least economic expenditure.

Patent Claims

1. A communication arrangement comprising at least one radio base station (RBS) to which radio network terminating facilities (RNT1...5) for connecting communication terminals can be connected, first communication relations (kb) being provided between the radio base station (RBS) and the radio network terminating facilities (RNT1...5) within a first communication network (or ACCESS), characterized in that the radio network terminating facilities (RNT1...5) exhibit additional transmission and switching means for implementing at least one further communication network (PN), the additional means being provided for implementing additional wireless communication relations (zkb) between the radio network terminating facilities (RNT1...5).

2. The communication arrangement as claimed in claim 1, characterized in that the additional means are constructed in such a manner that the additional wireless communication relations (zkb) between at least two radio network terminating units (RNT1...5) are switched via at least one further radio network terminating unit (RNT1...5).

3. The communication arrangement as claimed in claim 1 or 2, characterized in that the at least one further communication network (PN) is provided for implementing additional wireless communication relations in the home domain.

4. The communication arrangement as claimed in claim 1, 2 or 3, characterized in that the first communication network (or ACCESS) is constructed as a public communication network and the at least one further

communication network (PN) is constructed as a private communication network.

5. The communication arrangement as claimed in one of the preceding claims, characterized in that the additional means are constructed as switching and transmission routines, implemented as programs, for implementing the additional wireless communication relations (zkb).

10. The communication arrangement as claimed in one of the preceding claims, characterized in that the additional means are constructed in such a manner that a connection-oriented or connectionless wireless communication network (PN) is formed with the aid of the additional wireless communication relations (zkb).

15. 7. The communication arrangement as claimed in one of the preceding claims, characterized in that the additional means are constructed in such a manner that, with the aid of the additional wireless communication relations (zkb) between the radio network terminating units (RNT1...5), a self-configuring wireless communication network (PN) having a neural network structure is formed.

20. 8. The communication arrangement as claimed in claim 6 or 7, characterized in that the additional means are constructed in such a manner that

- information to be transmitted is inserted into packet-oriented data streams and the packet-oriented data streams are switched via the wireless communication network (PN), and

- that services based on the Internet protocol are implemented with the aid of the wireless communication network (PN).

9. The communication arrangement as claimed in one of the preceding claims, characterized in that, in the radio base station (RBS) and in the radio network terminating facilities (RNT1...5), means for implementing the communication relations (kb) are arranged which are constructed in such a manner that

10 - data streams to be transmitted from the radio base station (RBS) to the radio network terminating facilities (RNT1...5) are transmitted in accordance with a TDM- or FDM- or CDM-oriented multiple transmission method or according to a combination of these, and that

15 - data streams to be transmitted from the radio network terminating units (RNT1...5) to the radio base station (RBS) are transmitted according to a TDMA or CDMA or FDMA access transmission method or

20 a combination of these.

10. The communication arrangement as claimed in one of the preceding claims, characterized in that the additional means are constructed in such a manner that the additional wireless communication relations (zkb) between the network terminating units (RNT1...5) are implemented with the aid of an MC-CDMA multiple access method or by a COFDM modulation or by a multiple access method conforming to CDMA.

25 11. The communication arrangement as claimed in one of the preceding claims, characterized in that

at least one radio network terminating unit (RNT1...5) exhibits at least one further connection to an additional communication network (IP).

12. The communication arrangement as claimed in one 5 of the preceding claims, characterized in that the additional means are constructed in such a manner that a radio network terminating unit (RNT1...5) additionally represents a repeater network terminating unit.

13. The communication arrangement as claimed in one 10 of the preceding claims, characterized in that the radio network terminating unit (RNT1...5) exhibits further means for encrypting information to be transmitted with the aid of the additional wireless communication relations (zkb).

15. 14. The communication arrangement as claimed in one of the preceding claims, characterized in that the radio network terminating unit (RNT1...5) exhibits further means for compressing information to be transmitted with the aid of the additional wireless 20 communication relations (zkb).

15. The communication arrangement as claimed in one of the preceding claims, characterized in that the radio network terminating units (RNT1...5) exhibit further means for implementing a wireless 25 packet-oriented communication system (PN) according to ITU Recommendation H.323 or H.324.

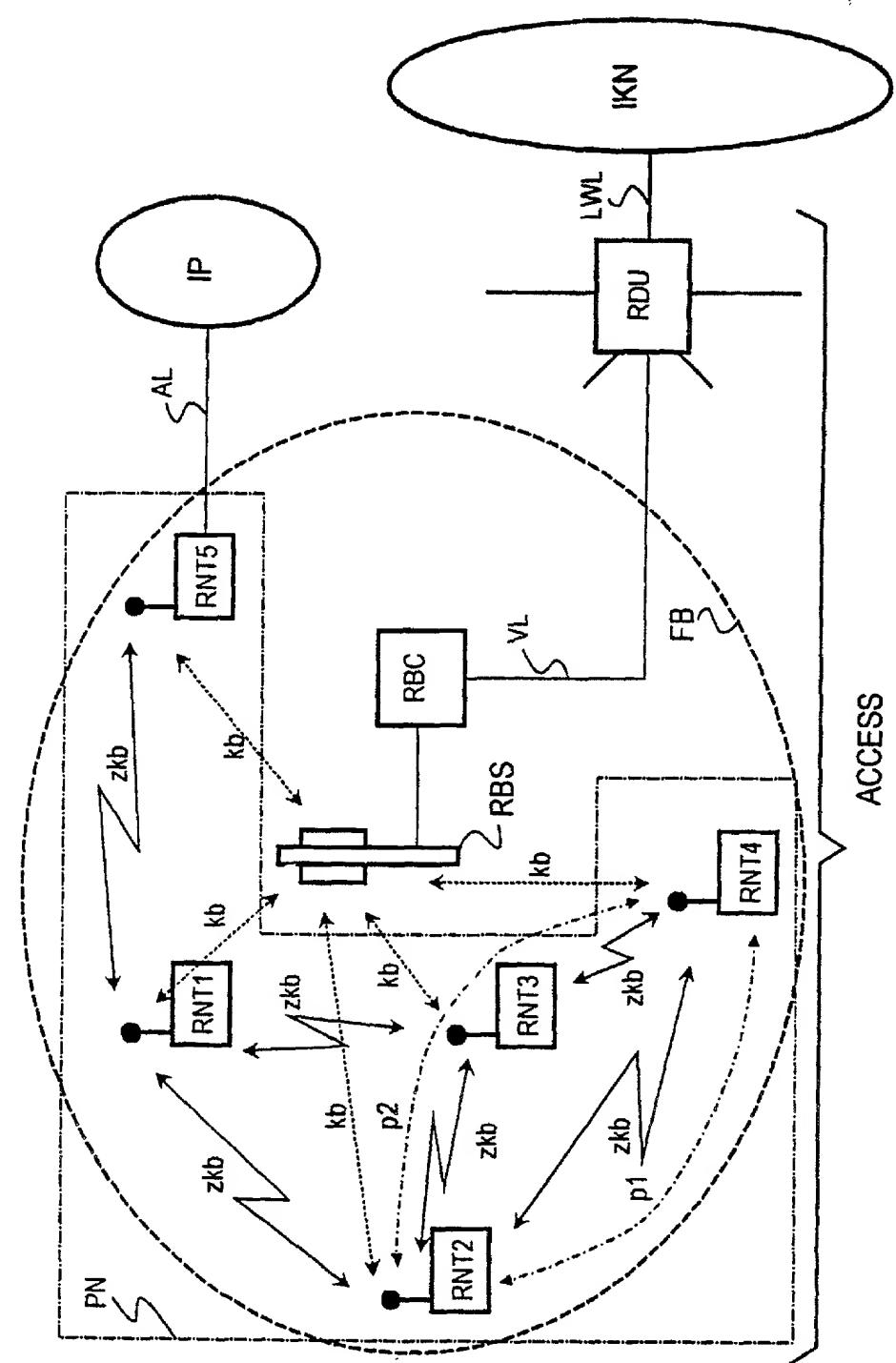
Abstract

Communication arrangement comprising at least one radio base station to which radio network terminating facilities for connecting communication terminals can be connected.

In a communication arrangement comprising at least one radio base station (RBS) to which radio network terminating facilities (RNT1...5) can be connected, additional wireless communication relations (zkb) via which information can be switched directly between the network terminating facilities (RNT1....5) are provided between the network terminating facilities (RNT1...5) in addition to communication relations (kb) between the radio base station (RBS) and the network terminating facilities (RNT1...5). A gradual migration toward communication networks with a decentralized organization is advantageously made possible.

Figure 1

09/762011



COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
 (Includes Reference to PCT International Applications) PCT/DE99/02002

 ATTORNEY'S
 DOCKET NUMBER
 112740-145

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name, I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

A COMMUNICATION SYSTEM INCLUDING AT LEAST ONE RADIO BASE STATION TO WHICH RADIO NETWORK TERMINATING FACILITIES FOR CONNECTING COMMUNICATION TERMINALS CAN BE CONNECTED

the specification of which (check only one item below):

is attached hereto.

was filed as United States application
 Serial No. 09/762,011

on January 31, 2001

and was amended

on _____ (if applicable).

was filed as PCT international application

Number _____

on _____

and was amended under PCT Article 19

on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY (If PCT indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
Germany	198 34 634.4	31 July 1998	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO

**Combined Declaration For Patent Application and Power of Attorney
(Continued) (Includes Reference to PCT International Applications) PCT/DE99/02002**
ATTORNEY'S DOCKET NO.
112740-145

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application;

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS		STATUS (Check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.				
PCT APPLICATION NO	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)		

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2 0 2	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE & ZIP CODE/COUNTRY
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201 <i>John G. Gustke</i>	SIGNATURE OF INVENTOR 202	SIGNATURE OF INVENTOR 203
DATE <i>03.04.2001</i>	DATE	DATE